SECTION 1

In response to Office action, and in reference to the claims on pages 85 to 89 of the original application filed 08/04/2003, the following shall henceforth be considered:

WHAT IS CLAIMED IS:

1. A method for evaluating at least one of a risk, safety and efficiency property of a portfolio belonging to a class of one of a probability density and a probability distribution, for a given time frame, comprising:

obtaining portfolio pricing data over said given time frame;

obtaining at least one benchmark X_b having benchmark profit, benchmark loss and benchmark return values;

with respect to investment returns, fitting one of

a stochastic investment class over said given time frame in relation to said benchmark X_b by obtaining a location parameter a, a scale parameter b and other corresponding shape parameters; and

an empirical investment class over said given time frame in relation to said benchmark X_b;

determining a mean return value X_m and a standard deviation σ_x using said class;

graphically illustrating said portfolio in relation to said benchmark X_b using said return value X_m and said standard deviation σ_x on an investment chart;

determining for said portfolio by using properties of said class a solution to $(X_m - X_b) = [(E_S - X_b) \cdot \alpha] + [(E_P - X_b) \cdot \gamma] = l'_S + l'_P$ with $l'_S = [(E_S - X_b) \cdot \alpha]$ and $l'_P = [(E_P - X_b) \cdot \gamma]$, wherein $(E_S - X_b)$ is a component of $(X_m - X_b)$ and l'_S representing an Expected Shortfall, $(E_P - X_b)$ is a component of $(X_m - X_b)$ and l'_P representing an Expected Profit, γ is a component of $(X_m - X_b)$ and l'_P representing a probability of profit, α is a component of $(X_m - X_b)$ and l'_S representing a probability of loss, l'_S is a component of $(X_m - X_b)$ representing an insurance against an Expected Shortfall and l'_P is a component of $(X_m - X_b)$ representing an insurance against an Expected Profit;

graphically illustrating at least one said component of said expression (X_m - X_b), in the form of a topographical map on said investment chart using said benchmark X_b;

whereby said portfolio can be evaluated in terms of at least one of risk, safety and efficiency.

2. A method as claimed in claim 1, further comprising:

determining at least one of E_1 efficiency as the ratio of the probability of profit γ to the probability of loss α, E2 efficiency as the negative value of the ratio of Expected Profit (E_P - X_b) to Expected Shortfall (E_S - X_b), E3 efficiency as the negative value of the ratio of the insurance against an Expected Profit I'_P to the insurance against an Expected Shortfall I'_S and E4 efficiency as the ratio of the risk premium (X_m - X_b) to the probability of loss α;

graphically illustrating at least one of said efficiencies, in the form of a topographical map on said investment chart using said benchmark X_b.

3. A method as claimed in claim 1, further comprising:

determining and graphically illustrating complementary orthogonal trajectories to the topographical map.

4. A method as claimed in claim 2, further comprising:

determining and graphically illustrating complementary orthogonal trajectories to the topographical map.

5. A method as claimed in claim 1, further comprising:

determining and graphically illustrating the rescaling of said given time frame for self affine probability densities or distributions.

6. A method as claimed in anyone of claims 1 to 5, wherein said graphically illustrating further comprises delimiting at least one set as first preference made up of

an investment zone and a complementary exclusion zone for said evaluation based on at least one of an investor's perception of desirability or tolerance to risk, safety and efficiency.

7. A system for evaluating at least one of a risk, safety and efficiency property of a portfolio belonging to a class of one of a probability density and a probability distribution, for a given time frame, comprising:

a portfolio pricing database over said given time frame;

a benchmark identifier for obtaining at least one benchmark X_b having benchmark profit, benchmark loss and benchmark return values;

with respect to investment returns, a class fitter for fitting one of

a stochastic investment class over said given time frame in relation to said benchmark X_b by obtaining a location parameter a, a scale parameter b and other corresponding shape parameters; and

an empirical investment class over said given time frame in relation to said benchmark X_b;

a parameter calculator for determining a mean return value X_m and a standard deviation σ_x using said class;

an illustrator for graphically illustrating said portfolio in relation to said benchmark X_b using said return value X_m and said standard deviation σ_x on an investment chart;

a component determiner for determining for said portfolio by using properties of said class a solution to $(X_m - X_b) = [(E_S - X_b) \cdot \alpha] + [(E_P - X_b) \cdot \gamma] = l'_S + l'_P$ with $l'_S = [(E_S - X_b) \cdot \alpha]$ and $l'_P = [(E_P - X_b) \cdot \gamma]$, wherein $(E_S - X_b)$ is a component of $(X_m - X_b)$ and l'_S representing an Expected Shortfall, $(E_P - X_b)$ is a component of $(X_m - X_b)$ and l'_P representing an Expected Profit, γ is a component of $(X_m - X_b)$ and l'_P representing a probability of profit, α is a component of $(X_m - X_b)$ and l'_S representing a probability of loss, l'_S is a component of $(X_m - X_b)$ representing an insurance against an Expected Shortfall and l'_P is a component of $(X_m - X_b)$ representing an insurance against an

Expected Profit;

said illustrator for graphically illustrating at least one said component of said expression (X_m - X_b), in the form of a topographical map on said investment chart using said benchmark X_b ;

whereby said portfolio can be evaluated in terms of at least one of risk, safety and efficiency.

8. A system as claimed in claim 7, further comprising:

a component efficiency determiner for determining at least one of E_1 efficiency as the ratio of the probability of profit γ to the probability of loss α, E2 efficiency as the negative value of the ratio of Expected Profit (E_P - X_b) to Expected Shortfall (E_S - X_b), E3 efficiency as the negative value of the ratio of the insurance against an Expected Profit I'_P to the insurance against an Expected Shortfall I'_S and E4 efficiency as the ratio of the risk premium (X_m - X_b) to the probability of loss α;

said illustrator graphically illustrating at least one of said efficiencies, in the form of a topographical map on said investment chart using said benchmark X_b.

9. A system as claimed in claim 7, further comprising:

an orthogonal trajectory determiner for determining complementary orthogonal trajectories to the topographical map, and said illustrator graphically illustrating the same.

10. A system as claimed in claim 8, further comprising:

an orthogonal trajectory determiner for determining complementary orthogonal trajectories to the topographical map, and said illustrator graphically illustrating the same.

11. A system as claimed in claim 7, further comprising:

a time rescaler for determining the rescaling of said given time frame for self

affine probability densities or distributions, and said illustrator graphically illustrating the same.

12. A system as claimed in anyone of claims 7 to 11, further comprising a set delimiter for delimiting at least one set as first preference made up of an investment zone and a complementary exclusion zone for said evaluation based on at least one of an investor's perception of desirability or tolerance to risk, safety and efficiency.

SECTION 2

In response to Office action, and in order to remain consistent with the considerations presented in section 1, the following shall henceforth be considered for the numbered paragraphs [0032], [0033] and [0034] set forth in the original application filed 08/04/2003:

[0032] A method and a system for evaluating at least one of a risk, safety and efficiency property of a portfolio belonging to a class of one of a probability density and a probability distribution, for a given time frame are provided. The method comprises obtaining portfolio pricing data over said given time frame; obtaining at least one benchmark X_b ; with respect to investment returns, fitting one of a stochastic investment class over said given time frame in relation to said benchmark X_b by obtaining a location parameter a, a scale parameter b and other corresponding shape parameters; and an empirical investment class over said given time frame in relation to said benchmark X_b; determining a mean return value X_m and a standard deviation σ_x using said class; graphically illustrating said portfolio in relation to said benchmark X_b using said return value X_m and said standard deviation σ_x on an investment chart; determining for said portfolio by using properties of said class a solution to $(X_m - X_b) = [(E_S - X_b) \cdot \alpha] + [(E_P - X_b) \cdot \gamma] = l'_S + l'_P$; graphically illustrating at least one said component of said expression $(X_m - X_b)$, in the form of a topographical map on said investment chart using said benchmark X_b.

[0033] According to a first broad aspect of the invention, there is provided a method for evaluating at least one of a risk, safety and efficiency property of a portfolio belonging to a class of one of a probability density and a probability distribution, for a given time frame. The method comprises: obtaining portfolio pricing data over said given time frame; obtaining at least one benchmark X_b having benchmark profit, benchmark loss and benchmark return values; with respect to investment returns, fitting one of a stochastic investment class over said given time frame in relation to said benchmark X_b by obtaining a location parameter a, a scale parameter b and other corresponding shape parameters; and an empirical investment class over said given time frame in

relation to said benchmark X_b; determining a mean return value X_m and a standard deviation σ_x using said class; graphically illustrating said portfolio in relation to said benchmark X_b using said return value X_m and said standard deviation σ_x on an investment chart; determining for said portfolio by using properties of said class a solution to $(X_m - X_b) = [(E_S - X_b) \cdot \alpha] + [(E_P - X_b) \cdot \gamma] = l'_S + l'_P$ with $l'_S = [(E_S - X_b) \cdot \alpha]$ and $l'_P = [(E_P - X_b) \cdot \gamma]$, wherein $(E_S - X_b)$ is a component of $(X_m - X_b)$ and l'_S representing an Expected Shortfall, $(E_P - X_b)$ is a component of $(X_m - X_b)$ and l'_P representing an Expected Profit, γ is a component of $(X_m - X_b)$ and l'_P representing a probability of profit, α is a component of $(X_m - X_b)$ and l'_S representing a probability of loss, l'_S is a component of $(X_m - X_b)$ representing an insurance against an Expected Shortfall and l'_P is a component of $(X_m - X_b)$ representing an insurance against an Expected Profit; graphically illustrating at least one said component of said expression $(X_m - X_b)$, in the form of a topographical map on said investment chart using said benchmark X_b ; whereby said portfolio can be evaluated in terms of at least one of risk, safety and efficiency.

[0034] According to a second broad aspect of the invention, there is provided an apparatus for evaluating at least one of a risk, safety and efficiency property of a portfolio belonging to a class of one of a probability density and a probability distribution, for a given time frame. The system comprises: a portfolio pricing database over said given time frame; a benchmark identifier for obtaining at least one benchmark X_b having benchmark profit, benchmark loss and benchmark return values; with respect to investment returns, a class fitter for fitting one of a stochastic investment class over said given time frame in relation to said benchmark X_b by obtaining a location parameter a, a scale parameter b and other corresponding shape parameters; and an empirical investment class over said given time frame in relation to said benchmark X_b; a parameter calculator for determining a mean return value X_m and a standard deviation σ_x using said class; an illustrator for graphically illustrating said portfolio in relation to said benchmark X_b using said return value X_m and said standard deviation σ_x on an investment chart; a component determiner for determining for said portfolio by using

properties of said class a solution to $(X_m - X_b) = [(E_S - X_b) \cdot \alpha] + [(E_P - X_b) \cdot \gamma] = I'_S + I'_P$ with $I'_S = [(E_S - X_b) \cdot \alpha]$ and $I'_P = [(E_P - X_b) \cdot \gamma]$, wherein $(E_S - X_b)$ is a component of $(X_m - X_b)$ and I'_S representing an Expected Shortfall, $(E_P - X_b)$ is a component of $(X_m - X_b)$ and I'_P representing an Expected Profit, γ is a component of $(X_m - X_b)$ and I'_P representing a probability of profit, α is a component of $(X_m - X_b)$ and I'_S representing a probability of loss, I'_S is a component of $(X_m - X_b)$ representing an insurance against an Expected Shortfall and I'_P is a component of $(X_m - X_b)$ representing an insurance against an Expected Profit; said illustrator for graphically illustrating at least one said component of said expression $(X_m - X_b)$, in the form of a topographical map on said investment chart using said benchmark X_b ; whereby said portfolio can be evaluated in terms of at least one of risk, safety and efficiency.

SECTION 3

In response to Office action, and in order to remain consistent with the considerations presented in section 1, the following shall henceforth be considered for the numbered paragraphs [0395] to [0405], set forth in the original application filed 08/04/2003, in relation to figures 13 and 14, updated versions of which are also provided here:

[0395] Shown in figure 13 is a system for evaluating at least at least one of a risk, safety and efficiency property of a portfolio belonging to a class of one of a probability density and a probability distribution, for a given time frame, according to the preferred embodiment. The system comprises a portfolio pricing database 300 containing pricing information of the portfolios; a benchmark identifier 302 for obtaining at least one benchmark X_b having benchmark profit, benchmark loss and benchmark return values; with respect to investment returns, a class fitter 304 for fitting one of a stochastic investment class over said given time frame in relation to said benchmark X_b by obtaining a location parameter a, a scale parameter b and other corresponding shape parameters; and an empirical investment class over said given time frame in relation to said benchmark X_b; a parameter calculator 306 for determining a mean return value X_m and a standard deviation σ_x using said class; an investment chart illustrator 308 for graphically illustrating said portfolio in relation to said benchmark X_b using said return value X_m and said standard deviation σ_x on an investment chart; a $(X_m - X_b)$ component determiner 310 for determining for said portfolio by using properties of said class a solution to $(X_m - X_b) = [(E_S - X_b) \cdot \alpha] + [(E_P - X_b) \cdot \gamma] = l'_S + l'_P$ with $l'_S = [(E_S - X_b) \cdot \alpha]$ and $l'_P = [(E_P - X_b) \cdot \gamma]$, wherein $(E_S - X_b)$ is a component of $(X_m - X_b)$ and l'_S representing an Expected Shortfall, $(E_P - X_b)$ is a component of $(X_m - X_b)$ and l'_P representing an Expected Profit, γ is a component of $(X_m - X_b)$ and l'_P representing a probability of profit, α is a component of $(X_m - X_b)$ and l'_S representing a probability of loss, l'_S is a component of $(X_m - X_b)$ representing an insurance against an Expected Shortfall and l'_P is a component of $(X_m - X_b)$ representing an insurance against an Expected Profit; said investment chart illustrator 308 for graphically illustrating at least one said component of

said expression (X_m - X_b), in the form of a topographical map on said investment chart using said benchmark X_b ; whereby said portfolio can be evaluated in terms of at least one of risk, safety and efficiency.

[0396] Optionally, the system can comprise a component efficiency determiner 312 for determining at least one of E1 efficiency as the ratio of the probability of profit γ to the probability of loss α, E2 efficiency as the negative value of the ratio of Expected Profit (EP - Xb) to Expected Shortfall (ES - Xb), E3 efficiency as the negative value of the ratio of the insurance against an Expected Profit I'_P to the insurance against an Expected Shortfall I'_S and E4 efficiency as the ratio of the risk premium (Xm - Xb) to the probability of loss α; said investment chart illustrator 308 graphically illustrating at least one of said efficiencies, in the form of a topographical map on said investment chart using said benchmark Xb.

[0397] The system may also optionally have an orthogonal trajectory determiner 314 for determining complementary orthogonal trajectories to the topographical map, and said investment chart illustrator 308 graphically illustrating the same.

[0398] A time period rescaler 316 may also be provided for determining the rescaling of said given time frame for self affine probability densities or distributions, and said investment chart illustrator 308 graphically illustrating the same. An investment zone and complementary exclusion zone delimiter 318 may also be provided for delimiting at least one set as first preference made up of an investment zone and a complementary exclusion zone for said evaluation based on at least one of an investor's perception of desirability or tolerance to risk, safety and efficiency, and said investment chart illustrator 308 graphically illustrating the same.

[0399] Figure 14 comprises figure 14A and figure 14B. Figure 14A lists the minimum set

of steps of the method for evaluating at least one of a risk, safety and efficiency property of a portfolio belonging to a class of one of a probability density and a probability distribution, for a given time frame, of the preferred embodiment of the present invention. The method comprises obtaining investment pricing data for a least one portfolio over a given time period 400; obtaining at least one benchmark X_b having benchmark profit, benchmark loss and benchmark return values 402; with respect to investment returns 404, fitting one of a stochastic investment class over said given time frame in relation to said benchmark X_b by obtaining a location parameter a, a scale parameter b and other corresponding shape parameters; and an empirical investment class over said given time frame in relation to said benchmark X_b; determining a mean return value X_m and a standard deviation σ_x using said class 406; graphically illustrating said portfolio in relation to said benchmark X_b using said return value X_m and said standard deviation σ_x on an investment chart 408; determining for said portfolio by using properties of said class 410 a solution to $(X_m - X_b) = [(E_S - X_b) \cdot \alpha] + [(E_P - X_b) \cdot \gamma] = l'_S + l'_P$ with $l'_S = [(E_S - X_b) \cdot \alpha]$ and $l'_P = [(E_P - X_b) \cdot \gamma]$, wherein $(E_S - X_b)$ is a component of $(X_m - X_b)$ and l'_S representing an Expected Shortfall, $(E_P - X_b)$ is a component of $(X_m - X_b)$ and l'_P representing an Expected Profit, γ is a component of $(X_m - X_b)$ and l'_P representing a probability of profit, α is a component of $(X_m - X_b)$ and l'_S representing a probability of loss, l'_S is a component of $(X_m - X_b)$ representing an insurance against an Expected Shortfall and l'_P is a component of $(X_m - X_b)$ representing an insurance against an Expected Profit; graphically illustrating at least one said component of said expression $(X_m - X_b)$, in the form of a topographical map on said investment chart using said benchmark X_b 412.

[0400] Optionally 414, the method can further comprise determining at least one of E_1 efficiency as the ratio of the probability of profit γ to the probability of loss α, E2 efficiency as the negative value of the ratio of Expected Profit $(E_P - X_b)$ to Expected Shortfall $(E_S - X_b)$, E3 efficiency as the negative value of the ratio of the insurance against an Expected Profit l'_P to the insurance against an Expected Shortfall l'_S and E4 efficiency as the ratio of the risk premium $(X_m - X_b)$ to the probability of loss ; and

graphically illustrating at least one of said efficiencies, in the form of a topographical map on said investment chart using said benchmark X_b.

[0401] Optionally, it can further comprise determining and graphically illustrating complementary orthogonal trajectories to the topographical map 416.

[0402] Optionally, the method can further comprise determining and graphically illustrating the rescaling of the time period for self affine probability densities or distributions 418.

[0403] Optionally, the method can further comprise, based on said graphically illustrating, delimiting at least one set as first preference made up of an investment zone and a complementary exclusion zone for said evaluation based on at least one of an investor's perception of desirability or tolerance to risk, safety and efficiency 420.

[0404] Paragraph is now void.

[0405] Paragraph is now void.